

How To: Set Steering Options



Figure 5. eDriveX Steering Setup screen.

The Outback S3 Automatic Steering options consist of four screens:

- Details** The **Details** screen displays the controller status, firmware version, and calibration details.
- Setup** The **Setup** screen (shown) defines steering options (auto-engage, sensitivity, attack, smoothing) and allows you to import/export Tuneseets. You may also perform a steering test from this screen.
- Calibrate** The **Calibration** screen displays the **eDriveX Calibration Wizard**. Use this to set up and fine-tune your system’s settings.
- Status** The **Status** screen displays the hardware, calibration, and runtime status of the system.

Steering Setup Screen Buttons

Buttons	Description
Auto-Engage Auto Manual	When set to Auto, the Auto Engage feature is enabled. eDriveX automatically engages when close to the guidance line. It automatically disengages when: manually turning the steering wheel, driving at less than 1 m.p.h. or exceeding a position error of 6 ft (2 m) or 10% of the current swath width.

Sensitivity: 1 [Up] [Down]	Sensitivity determines how aggressively the vehicle steers onto the guidance line when approaching it from close proximity. The setting range is 0 - 20. A low value increases smoothness but decreases accuracy; a high value increases accuracy but decreases smoothness.
Attack: 1 [Up] [Down]	Attack determines how aggressively the vehicle steers onto the guidance line when approaching it from a distance. The setting range is 0 - 10. A low value means slow line acquisition with immediate accuracy; a high value means fast line acquisition with a tendency to initially overshoot the line.
Smoothing: NONE [Up] [Down]	Smoothing determines the amount of smoothing of contours. Settings are: "None", "Medium" or "High". Adjust the smoothing setting if a vehicle/implement combination does not allow turning within a tight radius. In addition, a very sharp curvature might not be desired during high-speed operation.
Tuneset Import Export	A Tuneset is a saved set of steering options for a particular vehicle and valve type. Import/export Tunesets with eDriveX.
Lightbar: Med [Up] [Down]	Lightbar adjustment arrows allow you to adjust the sensitivity of the virtual lightbar on the Outback S3.
Steering Test Left Stop Right	Perform a steering test after the initial installation. Perform the test with the vehicle in a stationary position with GPS acquired. eDriveX will turn the wheels to full left lock position and right lock position, respectively. If the system does not respond, recheck your installation.



eDriveX Quick Reference Guide

Part Number: 875-0241-000

Quick Start

Congratulations on installing your eDriveX system! Before you begin using eDrive X, remember to:

- 1. Turn on power to the Outback S3 and eDriveX.

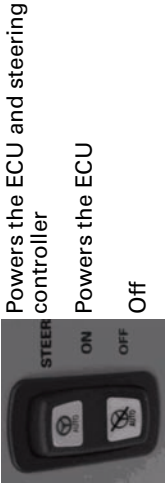


Figure 1. eDriveX power switch.

Warning! The power switch must be set to the ON (middle) position when operating the vehicle on public roads.

- 2. Verify the  appears on the Outback S3 Steering Setup screen. The "X" indicates eDriveX is connected.
- 3. Check your installation by performing a Steering Test (see "How to: Set Steering Options").
- 4. Complete the eDriveX Calibration Wizard (see "How to: Calibrate eDriveX").
- 5. Set Steering Options (see "How to: Set Steering Options").
- 6. You're ready to go!

How To: Calibrate eDriveX

1. Vehicle

Vehicle Type
Standard Tractor

Valve Type
HGPS STD FLOW

2. Dimensions

Antenna Pivot
2.00 m

Antenna Height
3.00 m

3. ECU Position

Antenna X
-1.00 m

Wheel Base
4.00 m

4. Coarse WAS

ECU Top
Left

ECU Connector
Down

5. Curvature

Wheel Angle Sensor
Left 0 Right 0

Radius
Min. Left 0.00m Min. Right 0.00m

6. Current

Current
Left 0-0 mA Right 0-0 mA

7. Fine WAS

Roll Bias
0.0

8. Roll Bias

Calibrate

5s RTK

No Job

0.0 ha

Figure 2. eDriveX Calibration Wizard.

- Press the **Calibrate** button on the **eDriveX Steering Setup** screen.
- Follow the numbered steps to complete the Calibration Wizard. Refer to the eDriveX User Guide for additional help. **It is important to calibrate the system in this sequence.**

Calibration Wizard At-A-Glance

Step	Description
1. Vehicle	Defines the vehicle and valve type.
2. Dimensions	Defines the vehicle's physical dimensions.
3. ECU Position	Defines the orientation of the eDriveX ECU console to the vehicle.
4. Coarse WAS	Calibrates the Coarse WAS values.
5. Curvature	Calibrates the minimum turn radius of the vehicle.
6. Current	Calibrates the minimum current of the eDriveX hydraulics.
7. Fine WAS	Calibrates the Fine WAS values.
8. Roll Bias	Calibrates the Roll Bias of the system.

How To: Calibrate Antenna Offset

The Antenna Offset (L/R) is the horizontal distance between the GPS antenna and the centerline of the vehicle.

Antenna Offset Calculation:

L/R Offset amount = Vehicle Offset on the ground / 2

L/R Offset direction = Inverted direction of vehicle offset on the ground (This is the direction where the vehicle would have to move to follow its same tracks.)

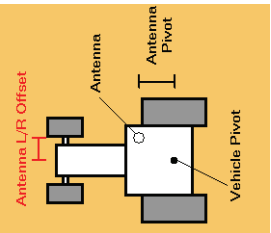


Figure 3. Antenna Offset (L/R).

There are two ways of calibrating the offset:

- using the **Track** method (preferred): This method measures the mismatch of the tracks while driving up and down on the same AB line (requires a surface where the vehicle leaves tracks).
- using the **Marker** method: This method measures the offset using flags (or other markers) to mark the center of the vehicle (hitch pin point). If using this method, use at least three measurement points evenly spaced on the AB line.

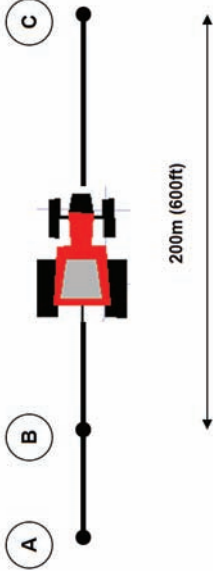


Figure 4. Antenna offset calibration method.

To perform the calibration:

- Set up a straight AB line by defining an A and B point.
- Maintain a speed of 5 kph (3 mph) and engage the system to control beyond point B for at least 200 m (600 ft) to point C.
- Perform a keyhole turn at point C and engage the system to control along the same guidance line back to point B with a speed of 5 kph (3 mph). Monitor the tracks while the system is controlling back to point B

and determine if the second layer of marks in the ground are to the left or right of the initial path.

- Measure the distance of the second path to the first path for at least three evenly distributed positions between the B and C points. Make sure not to measure the distance close to the B and C points where the system has been engaged initially.
- Enter the Antenna L/R Offset and direction within the eDriveX Dimensions Calibration screen.
- Test the completed calibration by letting the system control up and down on a new AB line. The tracks should match. If they do not match, repeat the calibration.

How To: Calibrate Implement Offset

The implement offset is the horizontal distance between the center of the implement and the centerline of the vehicle.

Implement Offset Calculation:

Left/Right Offset amount = Offset on the ground / 2

Left/Right direction = Direction of Offset on the ground (This is the opposite direction to where the implement would have to move to follow its same marks.)

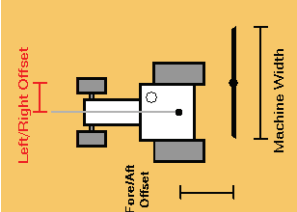


Figure 5. Implement Offset (L/R).

To perform the calibration:

- See steps for "How To: Calibrate Antenna Offset". Instead of measuring the tracks, measure the implement marks.
- Enter the Left/Right Offset and direction within the eDriveX Implement screen to compensate for the calculated misalignment of the implement towards the centerline of the vehicle.

Notes:

- The calibration only compensates for a static implement offset that is caused by the physical dimensions of the implement.
- Calibrate the Implement Left/Right Offset by controlling back and forth on the same pass. Otherwise an incorrect Implement Swath Width can bias the calibration procedure.